Claims

What is claimed:

1. A method for providing a tool for a powered machine, the tool having vibration damping means, a shaped working end having a tip, and a striking end having a tip, said method comprising the steps of:

a) determining an estimated antinode position of vibration of the tool in use when the tip of the shaped working end is hinged and the tip of the striking end is free to vibrate; and

b) locating a vibration damping member to cover the antinode position determined in step a).

2. A method as claimed in claim **1,** in which said tool is at least one of forged steel and machined steel, and said vibration damping means comprises a viscoelastic vibration damping member.

3. A method as claimed in claim **1**, in which at step a) the tool is modeled as a uniform beam, or rod, having a uniform section and uniformly distributed load.

4. A method as claimed in claim **1**, in which at step a) an estimated antinode position of one mode shape from the first three harmonic mode shapes of vibration of the tool in use is determined.

5. A method as claimed in claim **1,** further comprising the steps of:

c) determining a plurality of estimated antinode positions according to step a);

d) selecting a plurality of antinode positions from the antinode positions determined at step c) to cover with a vibration damping member; and

e) locating a vibration damping member arrangement to cover each selected antinode position.

6. A method as claimed in claim **5**, in which said vibration damping member arrangement comprises a vibration damping member located to cover more than one estimated antinode position.

7. A method as claimed in claim **1,** in which at step b) said vibration damping member is adhered, mechanically forced or shrunk onto said tool.

8. A tool for a powered machine, the tool having vibration damping means, a shaped working end having a tip, and a striking end having a tip, said vibration damping means comprising a vibration damping member located to cover an estimated antinode position of vibration of the tool in use when the tip of the shaped working end is hinged and the tip of the striking end is free to vibrate.

9. A tool is claimed in claim **8**, in which said tool is at least one of forged steel and machined steel, and said vibration damping means comprises a viscoelastic vibration damping member.

10. A tool as claimed in claim **8**, comprising a vibration damping member that is adhered, mechanically forced or shrunk onto said tool.

11. A tool as claimed in claim **8**, comprising a vibration damping member located to cover an estimated antinode position of vibration of the tool in use when the tool is modeled as a uniform beam, or rod, having a uniform section and uniformly distributed load.

12. A tool as claimed in claim **8**, comprising a vibration damping member located to cover an estimated antinode position of one mode shape from the first three harmonic mode shapes of vibration of the tool in use.

13. A tool as claimed in claim **8**, comprising a vibration damping member arrangement located to cover each of a plurality of estimated antinode positions.

14. A tool as claimed in claim **13**, in which said vibration damping member arrangement comprises a vibration damping member located to cover more than one estimated antinode position.